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Information Update

March 5, 1996
Update #24

1. EPA method 200.8 for trace metals by ICP/MS in wastewater **cannot** be used for NPDES permit testing unless special permission has been given by the EPA.

2. David Clift, Chemist at the State Laboratory has been working on improving extraction efficiency for Method 515.1. Following are his recommendations for achieving more consistent spike recoveries for this method:

   A. Bake out the NaCl and Na_2SO_4 at least 4 hours at 450EC to remove any contaminants that may cause problems.

   B. Check the pH at designated steps using a narrow range paper and be consistent on the final pH value.

   C. Average recovery for PCP in the WS30 study was 72% (average reported value was 9.97, true value was 13.8). However, mean recovery according to method 515.1, Table 2, page 249 is 130%.

   Suggestions from EPA on low PCP recoveries:

   A. Clean the injection port.

   2. Try lowering the pH to approximately 1 (during the ethyl ether extraction), this might force more of the PCP (and Dinoseb) into the ethyl ether phase.

3. The Technical Resources and Training Section at the Office of Laboratory Licensure recently held a Round Table Discussion on Inorganic and Microbiology methods. Following are some of the questions discussed at the meeting.

   Q. *Colilert: The instructions state that 5% of positives should be verified. What does this mean?*

   A. The recommendation is that 5% of all Mug positives or turbid MUG negatives should be verified. Labs, if they choose to initiate this QC, should establish their own criteria to

achieve the 5% frequency. It may vary depending on the number of positive samples the lab runs. It could be every 20th positive sample. You can use a known contaminated or a QC sample for the verification if you don't have enough regular positive samples.

Q. *What are the most common Lab deficiencies cited by surveyors?*

A.

1. QA not reviewed by lab director.
2. SOPs not in place.
3. Not responding to the missed parameters in WP/WS.
4. Labs using methods not certified by Arizona Laboratory Licensure.
5. Using inappropriate methods.

Q. *Why do we have to do QC each time we make media? Why can't we just QC the powder media?*

A. There are many variables in addition to the media powder quality which affect the quality of the final product (i.e., reagent water quality, autoclave conditions, preparer error, etc.) To detect these it is necessary to do QC each time a batch of media is prepared. (Even if the same person uses the same technique repeatedly on the same day.)

Q. *What are the steps necessary for a lab to switch from one coliform technique to another?*

A. Let Lab Licensure know by letter that you are adding and/or dropping a technique. List each technique specifically.

Recommendation only:

It is good laboratory practice to conduct a side by side study when changing methods to ensure laboratory personnel perform the new technique properly, etc.

Q. *Is it OK to use Chlorox to disinfect samples and then dump it down the drain?*

A. Yes. Be sure that the concentration of the Chlorox is sufficient for disinfection.

Q. *Why is a monthly plate count on DI water necessary if the water is not used for Micro testing?*

A. A monthly plate count must be conducted if applicable to the testing being performed, for example BOD.

Q. *Some laboratories utilize MDLs for reporting purposes, others utilize PQLs or Minimum Reporting Levels. What is the position of ADHS on reporting criteria? Should there be consistency?*

A. The lab may use whichever meets the needs of their individual clients. If your client is uncertain, check with the regulatory agency involved. It is recommended that the reporting criteria is specified in the contract between the lab and the client. Also be certain to make it clear on the final report which one is being used. The PQL is generally accepted as having more analytical significance.

Q. *Licensure requires to write SOP for every method. Can we combine Standard Methods and EPA method as one SOP?*

A. Yes. You will have to write separate QC sections for the different methods.

Q. *Can we combine samples from different methods into one analytical run?*

A. Yes. If you follow the most stringent QC requirements of all the methods combined.

Q. *BOD: a) Will an alternate method be available in the near future?*

b) The method states the blank should be 0.2 or less. What corrective action should be taken if it is not at 0.2?

A. No one at the round table discussion was aware of any alternate methods that will become available in the near future.

If the blank is over 0.2 then you must report out the blank values. It was suggested that the most common cause of high blank values is the reagent water itself. Also, if you are using a water purification system make sure all the lines and supply tanks are clean.

Q. *Turbidity Test: I never have NTU's outside 1-40. For calibration do I need to calibrate my instrument all the way up to 800 NTU and below 1 NTU?*

A. No. If you know the range of your samples then, calibrate for that range.

A comment was made that it was necessary to make sure that you use turbidity free water for your dilutions. A further suggestion was made that you blank out your turbidity meter with your dilution water.

Q. *When are control charts required? If the lab has specified limits or is following the method QC requirements, why do control charts?*

A. Lab Licensure currently would like to see the labs plotting control charts for at least one of the QC parameters. This would typically be either the CCV or check standard.

The control charts are not only required to see if the control sample is within a certain acceptable range but also to track possible trends in the analysis. This can aid the analyst in detecting possible analytical bias or other analytical method problems.

Q. *How can I quickly cancel the memory interference on GFAA for Mo? Is it my tubes or a chemical effect?*

A. Generally speaking you need to make sure the burnout at the end of the run is hot enough to prevent any carry over. It is possible that your graphite tubes are becoming corroded during the analysis which would allow for memory effects. This corrosion can be caused by not replacing the tubes often enough or the wrong acid or too much acid being used in the sample digestion. It is possible that the particular lot of tubes you are using may not be good.

For further assistance with this problem contact: Mr. Isaac Robert at the Arizona State Lab, phone (602) 542-6113.

Q. *Has Arizona adopted regulations concerning the Phase II and V compounds?*

A. Yes. The State adopted these regulations on April 28, 1995. Since the State has added these compounds to their regulations they are no longer referred to in the regulations as Phase II and Phase V compounds.

Q. *Where can a listing of the above compounds be found?*

A. They can be found in the Arizona Administrative Code, Title 18 Chapter 4, articles I-V with appendices A,B and C. A copy of this (available either on disk or hard copy) can be obtained from:
Secretary of State, Publications
State Capital West Wing
1700 W. Washington Street Room 103
Phoenix, Arizona 85007.

Their phone number is (602) 542-4086. According to their office a hard copy will cost $7.00. This needs to be prepaid or you can stop by their office and pick up a copy.

Q. *What are the detection levels required by the State for phase II & V SOC compounds?*

A. For an individual point of entry sample the lab must be able to see 50% of the MCL (except for four of the compounds). These four compounds are atrazine, dibromochloropropane, ethylene dibromide, and di(2-ethylhexyl)pthalate. For these four compounds, the Lab must be able to quantitate down to the MCL for each compound.

For composite samples the state regulations refer back to the federal regulations. The federal regulations require that the detection limit of the method used for analyses be less than one-fifth of the MCL.

Q. *What are laboratory requirements for reporting microbiology results to ADEQ?*

A. The drinking water rules hold the owner of the water system responsible for reporting results to ADEQ. However, a laboratory can if desired by the owner of a

water system report the results directly to ADEQ. ADEQ does recommend that a lab report results directly to ADEQ if the results show a potential problem with compliance. This is so that resolution of the problem can occur quickly and with minimal risk to the public.

Please Note: The rest of the questions from the Round Table Discussion will be addressed in future Information Updates. Also, due to the heavy workload of the surveyors, it will not be possible to hold the Round Table discussions on a monthly basis as planned. We will try to schedule these sessions every other month.